

What is claimed is:

1. An article of footwear comprising, in combination:
an upper; and
a sole structure secured to the upper, the sole structure comprising:
an upper plate positioned adjacent the upper and extending longitudinally along at least a portion of the upper; and
a heel plate assembly secured at one end thereof to the upper plate, the heel plate assembly extending downwardly from the upper plate such that the heel plate assembly forms an acute angle with the upper plate, a medial side of the heel plate assembly having a thickness greater than a thickness of a lateral side of the heel plate assembly.
2. The article of footwear of claim 1, wherein the heel plate assembly comprises a first layer, a second layer positioned on the first layer and having a width less than a width of the first layer, and a third layer positioned on the second layer and having a width less than the width of the second layer.
3. The article of footwear of claim 2, wherein a central portion of the first layer is spaced apart from a central portion of the second layer, and the central portion of the second layer is spaced apart from a central portion of the third layer.
4. The article of footwear of claim 1, further comprising a layer of foam material positioned above the upper plate.
5. The article of footwear of claim 4, wherein a plurality of grooves is formed in a lower surface of the layer of foam material.

6. The article of footwear of claim 1, wherein a plurality of slots is formed in a forefoot portion of the upper plate.
7. The article of footwear of claim 6, wherein each of the slots extends transversely across at least a portion of the upper plate from one of a medial and lateral side of the upper plate.
8. The article of footwear of claim 1, wherein the upper plate and heel plate assembly are formed of a fiber-reinforced composite.
9. The article of footwear of claim 1, wherein the upper plate and heel plate assembly are formed of a carbon fiber composite.
10. The article of footwear of claim 1, further comprising a layer of foam material secured to a lower surface of the upper plate and positioned forwardly of the heel plate assembly.
11. The article of footwear of claim 10, wherein a rear portion of the layer of foam material extends beneath a front portion of the heel plate assembly.
12. The article of footwear of claim 1, further comprising a forefoot plate secured to the upper plate, a rear lateral portion of the forefoot plate having a thickness greater than a forward medial portion of the forefoot plate.
13. The article of footwear of claim 12, wherein the forefoot plate and heel plate assembly are of unitary construction.

14. The article of footwear of claim 12, wherein the forefoot plate is formed of a fiber-reinforced composite

15. The article of footwear of claim 12, wherein the forefoot plate is formed of a carbon fiber composite.

16. The article of footwear of claim 12, further comprising a layer of foam material positioned beneath a midfoot portion of the upper plate, above a rear portion of the forefoot plate, and above a forward portion of the heel plate assembly.

17. The article of footwear of claim 16, wherein the layer of foam material comprises a plurality of pieces of foam.

18. The article of footwear of claim 1, further comprising a forefoot plate secured to the upper plate.

19. The article of footwear of claim 18, wherein the forefoot plate comprises:

a first spring arm having a forward portion extending downwardly and forwardly from the upper plate;

a second spring arm extending forwardly and downwardly from the first spring arm; and

a third spring arm extending forwardly and downwardly from the second spring arm.

20. The article of footwear of claim 19, wherein the first spring arm has a length longer than a length of the second spring arm, and the length of the second spring arm is longer than a length of the third spring arm.

21. The article of footwear of claim 19, wherein a forward portion of the first spring arm includes a medial finger and a lateral finger.

22. The article of footwear of claim 21, wherein the medial finger has a length longer than a length of the lateral finger.

23. The article of footwear of claim 19, wherein a forward portion of the second spring arm includes a medial finger and a lateral finger.

24. The article of footwear of claim 23, wherein the medial finger has a length longer than a length of the lateral finger.

25. The article of footwear of claim 19, wherein a forward portion of the third spring arm includes a medial finger and a lateral finger.

26. The article of footwear of claim 25, wherein the medial finger has a length longer than a length of the lateral finger.

27. The article of footwear of claim 19, further comprising a first wedge of foam material positioned between a forefoot portion of the upper plate and the first spring arm.

28. The article of footwear of claim 19, further comprising a second wedge of foam material positioned between the first spring arm and the second spring arm.

29. The article of footwear of claim 19, further comprising a third wedge of foam material positioned between the second spring arm and the third spring arm.

30. The article of footwear of claim 19, further comprising a fourth wedge of foam material positioned between the upper plate and the heel plate assembly.

31. The article of footwear of claim 18, wherein the forefoot plate is formed of a fiber-reinforced composite.

32. The article of footwear of claim 18, wherein the forefoot plate is formed of a carbon fiber composite.

33. The article of footwear of claim 18, wherein the forefoot plate and heel plate assembly are of unitary construction.

34. The article of footwear of claim 18, wherein the forefoot plate comprises a first layer, a second layer positioned on the first layer, and a third layer positioned on the second layer.

35. The article of footwear of claim 34, wherein the first layer extends substantially across a width of the upper plate.

36. The article of footwear of claim 34, wherein the second layer is substantially C-shaped and opens toward a forward medial area of the first layer.

37. The article of footwear of claim 34, wherein the third layer is substantially V-shaped, and has a medial finger extending along a medial edge of the second layer and a lateral finger extending along a lateral edge of the second layer.

38. The article of footwear of claim 1, wherein the heel plate assembly comprises a first layer having a first end and a second end, and a second layer positioned above the first layer and having a first end and a second end, the first end of the second layer secured to the first end of the first layer, a central portion of the second layer spaced apart from a central portion of the first layer, and the second end of the second layer being adjustably secured to the second end of the first layer so as to vary a size of a gap formed between the central portion of the first layer and the central portion of the second layer and to vary the steepness of the central portion of the second layer with respect to the upper plate.

39. The article of footwear of claim 38, wherein the second end of the second layer is slidable within a slot formed in the second end of the first layer.

40. An article of footwear comprising, in combination:

an upper;

a sole structure secured to the upper, the sole structure comprising:

an upper plate positioned adjacent the upper and extending longitudinally along at least a portion of the upper; and

a heel plate assembly secured at one end thereof to the upper plate, the heel plate assembly extending downwardly from the upper plate such that the heel plate assembly forms an acute angle with the upper plate, the heel plate assembly comprising

a first layer;

a second layer positioned on the first layer and having a width less than a width of the first layer; and

a third layer positioned on the second layer and having a width less than the width of the second layer; and

a layer of foam material secured to a lower surface of the upper plate and positioned forwardly of the heel plate assembly.

41. An article of footwear comprising, in combination:

an upper;

a sole structure secured to the upper, the sole structure comprising:

an upper plate positioned adjacent the upper and extending longitudinally along at least a portion of the upper;

a heel plate assembly secured at one end thereof to the upper plate, the heel plate assembly extending downwardly from the upper plate such that the heel plate assembly forms an acute angle with the upper plate, a medial side of the heel plate assembly having a thickness greater than a thickness of a lateral side of the heel plate assembly; and

a forefoot plate secured to the upper plate and comprising

a first layer extending substantially across a width of the upper plate;

a substantially C-shaped second layer positioned on the first layer and opening toward a forward medial area of the first layer; and

a substantially V-shaped third layer positioned on the second layer and having a medial finger extending along a medial edge of the second layer and a lateral finger extending along a lateral edge of the second layer.

42. An article of footwear comprising, in combination:

an upper;

a sole structure secured to the upper, the sole structure comprising:

an upper plate positioned adjacent the upper and extending longitudinally along at least a portion of the upper;

a heel plate assembly secured at one end thereof to the upper plate, the heel plate assembly extending downwardly from the upper plate such that the heel plate assembly forms an acute angle with the upper plate, a medial side of the heel plate assembly having a thickness greater than a thickness of a lateral side of the heel plate assembly; and

a forefoot plate secured to the upper plate, the forefoot plate comprising

a first spring arm having a forward portion extending downwardly and forwardly from the upper plate;

a second spring arm extending forwardly and downwardly from the first spring arm; and

a third spring arm extending forwardly and downwardly from the second spring arm;

a first wedge of foam material positioned between a forefoot portion of the upper plate and the first spring arm;

a second wedge of foam material positioned between the first spring arm and the second spring arm; and

a third wedge of foam material positioned between the second spring arm and the third spring arm; and

a fourth wedge of foam material positioned between the upper plate and the heel plate assembly.

43. The article of footwear of claim 42, wherein the first spring arm has a length longer than a length of the second spring arm, and the second spring arm has a length longer than a length of the third spring arm.

44. The article of footwear of claim 42, wherein a forward portion of the first spring arm includes a medial finger and a lateral finger, the medial finger having a length longer than a length of the lateral finger.

45. The article of footwear of claim 42, wherein a forward portion of the second spring arm includes a medial finger and a lateral finger, the medial finger having a length longer than a length of the lateral finger.

46. The article of footwear of claim 42, wherein a forward portion of the third spring arm includes a medial finger and a lateral finger, the medial finger having a length longer than a length of the lateral finger.

47. An article of footwear comprising, in combination:

an upper;

a sole structure secured to the upper, the sole structure comprising:

an upper plate positioned adjacent the upper and extending longitudinally along at least a portion of the upper, a plurality of slots being formed in a forefoot portion of the upper plate, each of the slots extending transversely across at least a portion of the upper plate from one of a medial and lateral side of the upper plate; and

a heel plate assembly secured at one end thereof to the upper plate, the heel plate assembly extending downwardly from the upper plate such that the heel plate assembly forms an acute angle with the upper plate, the heel plate assembly comprising

a first layer;

a second layer positioned on the first layer and having a width less than a width of the first layer, a central portion of the second layer being spaced apart from a central portion of the first layer; and

a third layer positioned on the second layer and having a width less than the width of the second layer, a central portion of the third layer being spaced apart from the central portion of the second layer; and

a layer of foam material positioned above the upper plate and having a plurality of grooves extending transversely across at least a portion of a lower surface of the layer of foam material from one of a medial and lateral side of the layer of foam material.